Application for an Individual Variance from Base Numeric Nutrient Criteria

Instructions: Review the instructions below for an overview of each step that needs to be taken for the economic analysis of an individual variance for a public wastewater facility. Then, start at Worksheet A and work through each of the worksheets until you finish the analysis at Worksheet I-Remedy. The next tab after this one--the 'Summary Worksheet' tab--is to be filled out after you work through each worksheet in order to summarize your results. For a Non-Degredation analysis, go directly to the second to last tab labeled "Non-Deg", read the instructions, and then start at Worksheet A.

individual variance to meet base numeric nutrient criteria. Also provided to the right is a flowchart that summarizes steps 1-6 (but leaves out steps 7 and 8). It is highly recommended that you look through the DEQ Guidance on Nutrient Standards located at ___. You may also want to read through the complete 'EPA Interim Economic Guidance for Water Quality Standards' (EPA Guidance) which can be found at http://www.epa.gov/waterscience/standards/econworkbook/. The worksheets provided in this Excel document correspond to the EPA Guidance, although it is important to note that several **key changes** have been made from the EPA Guidance in various sections of this worksheet in order to tailor this analysis to Montana's needs. Therefore, although the EPA Guidance is helpful to read through, it is the worksheets in this Excel file that must be used to apply for an individual variance in Montana.

OVERALL STEPS SUMMARY	**NOTES**
Steps 1-2: Describe and Cost Out Project	
Step 1: **Verify Project Costs** for meeting Base Numeric Nutrient Standards and Calculate the Annual Cost of the Pollution control project	See Worksheets A and B
Step 2: **Calculate Total Annualized Pollution Control Costs Per Household**	Use Worksheet C. Calculate this amount using your own numbers or the representative 'WERF cost numbers' in Worksheet B
Steps 3-5: The Substantial Test	
Step 3: **Calculate and Evaluate the Municipal Preliminary Screener Score**	Use Worksheet D.
Step 4: **Apply the Secondary Test** - This measurement incorporates a characterization of the the socio-economic and financial well-being of households in the community.	Use Worksheets E and F. The ability of a community to finance a project will be dependent upon existing household financial and socio-economic conditions within that community.

Step 5: **Assess where the community falls in The Substantial Impacts Matrix** - This matrix evaluates whether or not communities are expected to incur '**substantial**' economic impacts due to the implementation of the pollution control costs. If the applicant cannot demonstrate '**substantial**' impacts, then they will be required to meet base numeric nutrient water quality standards. If they can demonstrate '**substantial**' economic imapcts, then the applicant moves on to the Widespread Test.

Use Worksheet G. The evaluation of substantial impacts resulting from public entity compliance with base numeric nutrient water quality standards includes two elements, 1) financial impacts to the public entity (reflected in increased household wastewater fees through the Municipal Preliminary Screener Score) and 2) current socioeconomic conditions of the community reflected through the secondary score. Governments have the authority to levy taxes and distribute pollution control costs among households and businesses according to the tax base. Similarly, sewage authorities charge for services, and thus can recover pollution control costs through users fees. Whether or not the community faces substantial impacts depends on both the cost of the pollution control and the general financial and economic health of the community.

Step 6-Widespread Test

Step 6: If impacts are expected to be substantial from meeting base numeric nutrient criteria, then the applicant goes on to **demonstrate whether impacts are also expected to be 'widespread'.**

Estimated *changes* in socio-economic indicators as a result of the substantial impacts (additional pollution control costs) will be used to determine whether widespread impact has occurred

Step 7-8: Remedy

Step 7: **Calculate the sliding scale number.** If a permittee has demonstrated that substantial and widespread economic impacts would occur if they were to comply with the base numeric nutrient standards, and there are no reasonable alternatives to discharging, then the cost the permittee will need to expend towards the pollution control project will be based on a sliding scale found in Worksheet I-Remedy.

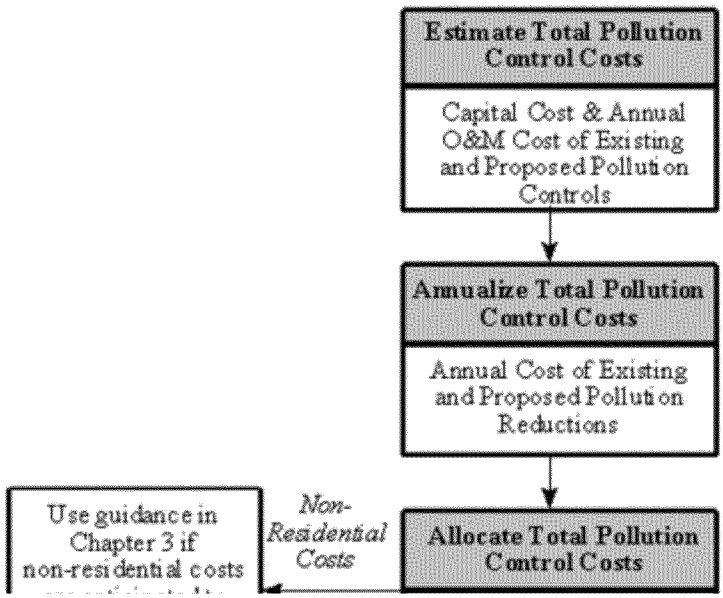
Step 8: **DEQ will evaluate options and select the alternative that would result in the highest water quality treatment that does not trigger substantial and widespread economic impacts.** For the town, determine current MHI percent of wastewater bill, current treatment level and current treatment technology of the WWTP (Worksheets A-D). The difference between the current MHI percent and the cost cap MHI from the sliding scale is the additional money that would be expected to be spent improving water quality.

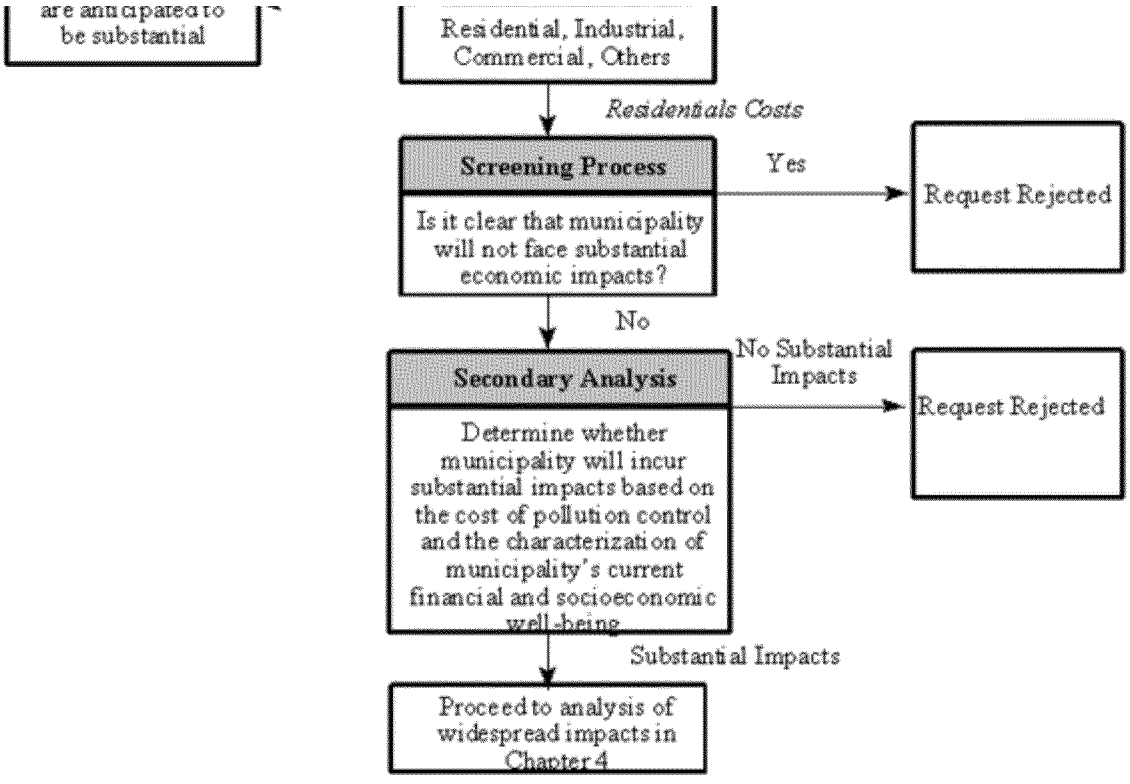
eric Nutrient Criteria

eds to be taken for the economic
Worksheet A and work through each
tab after this one--the 'Summary
to summarize your results. For a
", read the instructions, and then

r an individual variance to meet base
leaves out steps 7 and 8). It is highly
You may also want to read through the
can be found at
xcel document correspond to the EPA
PA Guidance in various sections of this
ance is helpful to read through, it is the

Figure 2-1:
Measuring Substantial Impacts
(Public Entities)




are anticipated to be substantial
Residential, Industrial, Commercial, Others
Residentials Costs
Screening Process
Is it clear that municipality will not face substantial economic impacts?
Yes
Request Rejected
No
Secondary Analysis
Determine whether municipality will incur substantial impacts based on the cost of pollution control and the characterization of municipality's current financial and socioeconomic well-being
No Substantial Impacts
Request Rejected
Substantial Impacts
Proceed to analysis of widespread impacts in Chapter 4

Instructions: Fill out the Summary Worksheet below in order to summarize the results that you reach for each step of your analysis. This will help to give a simple overview of what you found out. If using an Excel spreadsheet is too cumbersome for this task, simply answer the questions on a separate sheet.

OVERALL STEPS SUMMARY

Step 1: Verify Project Costs for meeting Base Numeric Nutrient Standards and Calculate the Annual Cost of the Pollution control project _____

Step 2: Calculate Total Annualized Pollution Control Costs Per Household _____

Step 3: Calculate and Evaluate the Municipal Preliminary Screener Score-- identifies only entities that can pay for sure _____

Step 4: Apply the Secondary Test and Report what you find - This measurement incorporates a characterization of the community's current financial and socioeconomic well-being _____

Step 5: Assess where the community falls in The Substantial Impacts Matrix - This matrix evaluates whether or not communities are expected to incur **substantial** economic impacts due to the implementation of the pollution control costs. If the applicant cannot demonstrate substantial impacts, then they will be required to meet existing water quality standards. If they can demonstrate substantial imapcts, then the applicant moves on to the Widespread Test. _____

Step 6: If impacts are expected to be substantial, then the applicant goes on to demonstrate whether they are also expected to be **widespread in the study area** (Go to "DEQ Widespread Criteria" tab)**.** _____

Step 7: If a permittee has demonstrated that substantial and widespread economic impacts would occur if they were to comply with the base numeric nutrient standards, and there are no reasonable alternatives to discharging, then the cost the permittee will need to expend towards the pollution control project will be based on a sliding scale found in Worksheet I-Remedy. Calculate the sliding scale number. _____

Step 8: For the town, determine current MHI percent of wastewater bill, current treatment level and current treatment technology of the WWTP (Worksheets A-D). The difference between the current MHI percent and the cost cap MHI from the sliding scale is the additional money that would be expected to be spent improving water quality. Calculate that difference out to whole town over 20 years and examine what could be done with that money. DEQ will evaluate options and select the alternative that would result in the highest effluent condition that does not trigger substantial and widespread economic impacts.

ults that you reach for each step of your
n Excel spreadsheet is too cumbersome for

Tests for Substantial Impacts

Worksheet A--Pollution Control Project Summary Info

For the purposes of this workbook, a **public entity** refers to any governmental unit that must comply with pollution control requirements in order to meet water quality standards. The most common example is a municipality or sewage authority operating a publicly owned treatment works (POTW) that must be upgraded or expanded. Municipalities, however, may also be required to control other point sources or nonpoint sources of pollution within their jurisdiction.

Note: The most cost effective project to meet the water quality goals is preferred. Public entities should consider a broad range of discharge management options including pollution prevention, end-of-pipe treatment, and upgrades or additions to existing treatment. Specific types of pollution prevention activities that should be considered are found in Chapter 2 of the EPA Guidence.

Whatever the approach, the applicant must demonstrate that the proposed project is the most appropriate means of meeting base numeric water quality standards and must document project cost estimates. ***If at least one of the treatment alternatives that meets water quality standards will not have a substantial financial impact and is acceptable, then the community should not proceed with the analysis presented in the rest of this workbook.***

For the "Substantial" portion of this test, please define in the box to the right the 'affected area' and use that throughout this section. The affected area is typically defined as the governmental jurisdiction responsible for paying wastewater compliance costs--typically a town of municipality. If only a proportion of the community is served, only those who pay are the affected community; however, if such fine-resolution data are not available, then data for the whole community may be used instead.

_____

Please answer the following questions in the lines provided:

Current Capacity of the Pollution Control System (skip this for Non-Deg)	_____	(million gallons p
Design Capacity of the Pollution Control System	_____	(million gallons p
Current Excess Capacity % (skip this for Non-Deg)	_____	(percentage)
Expected Excess Capacity after Completion of Project %	_____	(percentage)
Projected Groundbreaking Date	_____	
Projected Date of Completion	_____	

For the Following Sections, you may use a separate sheet(s) of paper

Please describe the pollution control project being proposed to meet base numeric nutrient criteria standards, including drectly relevant infrastructure needed in addition to the plant (e.g. new sewage pipes) and how the project meets water quality standards. Please include capital and O&M expenditures.

Please describe the other pollution control options considered, explaining why each option was rejected. Explain how each alternative would have met water quality standards. Describe other reasonable alternatives considered to meet the numeric criteria or the general variance

Is the proposed project the least expensive that can be used to meet the water quality standards goals? If not, give reasons why it is not.

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Tests for Substantial Impacts

Worksheet B-Calculation of Total Annualized Project Costs for Required Upgrades

Note: The capital portion of project costs is typically financed over approximately 20 years, by issuing a municipal debt instrument such as a general obligation bond or a revenue bond. Local governments may also finance capital costs using bank loans, state infrastructure loans (revolving funds), or federal subsidized loans (such as those offered by the Farmers Home Administation).

If project costs were estimated for some prior year, these costs should be adjusted upward to reflect current year prices using the average annual national Consumer Price Index (CPI) inflation rate for the period

Please answer the following data requests using the lines at the right. These are the estimated costs of the WWTP meeting the Base Numeric Nutrient Criteria. Please insert your own numbers (estimated by a professional) or you can use the WERF numbers in the small spreadsheet provided below as an estimate.

Your Own Estimated Numbers

Capital Cost of Project-(Use a separate sheet(s) of paper if needed)	$0	
Other One-Time Costs of Project (Please List, if any):		
_____	$0	
_____	$0	
_____	$0	
_____	$0	
Total Capital Costs (Sum column) $ (1)	$0	new underground pipes Preliminary Engineering Report
Portion of Capital Costs to be Paid for with Grant Monies $ (2) (Paul)	$0	
Capital Costs to be Financed [Calculate: (1) - (2)] $ (3)	$0	
Type of financing (e.g., G.O. bond, revenue bond, bank loan)		
Interest Rate for Financing (expressed as decimal) (i)	0.02	interest rate as a decimal.
Time Period of Financing (in years) (n)	20	
Annualization Factor =[i/ [[(1+i)to nth power -1]]+i (or see Appendix B) (4)	0.06116	by some factor to account for non-payment.
Annualized Capital Cost for WWTP [Calculate: (3) x (4)] (5)	$0	

B. Operating and Maintenance Costs

Annual Costs of Operation and Maintenance (including but not limited to: monitoring, inspection,permitting fees, waste disposal charges, repair, administration and replacement.) (Please list below and state in terms of dollars per year). Use a separate sheet(s) of paper if needed.

1)	$0
2)	$0
3)	$0
4)	$0
Total Annual O & M Costs (Sum column) $ (6)	$0

C. Total Annual Cost of Pollution Control Project

Total Annual Cost of Pollution Control Project [(5) + (6)] $ (7)	$0

Using WERF Numbers--If you use WERF numbers, calculate MHI and go directly to worksheet D, filling in M

Wastewater Treatment Nutrient Removal and Sustainability, Considering Capital and Operating Costs, Energy, Air and Water Quality and More" (WERF, 2011). The WERF study looked at five different levels of nutrient treatment from minimal treatment (level 1) to a very stringent treatment that is close to Montana's base nutrient criteria standard (level 5). Level 5 would more or less meet Montana's nutrient criteria (coming up just short on TN but being more stringent than the criteria for TP). Level 1 treatment in the WERF study, while more advanced than lagoons, does not directly treat N and P. WERF Level 2 treatment is about the same as the general variance levels outlined in SB 367 (actually, WERF Level 2 is a bit more stringent). Please use WERF level 5 to estimate the cost of meeting base numeric nutrient standards.

Table 3. Effluent Quality and Associated Treatment Costs in the Interim WERF study (WERF 2011)

Level	Description	Capital Cost (million dollars per 1 GPD design flow)
Level 1	No N and P removal	9.3
Level 2	1 mg/l TP; 8 mg/l TN	12.7
Level 3	0.1-0.3 mg/l TP; 4-8 mg/l TN	14.4
Level 4	<0.1 mg/l TP; 3 mg/l TN	15.3
Level 5	<0.01 mg/l TP; 1 mg/l TN	21.8

Community	Current Treatment Technology	Design Flow (Million Gallons per Day)
Example Town X	Assume WERF Level 1	0.8
name of your community	Assume WERF Level 1	0

we assume a 20 year loan/bond at 5% in

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g a municipal debt instrument such as a general obligation bond or a
ure loans (revolving funds), or federal subsidized loans (such as those

current year prices using the average annual national Consumer Price

s of the WWTP meeting the Base Numeric Nutrient
umbers in the small spreadsheet provided below as an

This includes costs of directly relevant new infrastructure needed to meet requirements such as new underground pipes

This should be a realistic amount and should be identical to financing plans identified in the Preliminary Engineering Report

The interest rate should reflect the type of debt instrument likely to be used. Express the interest rate as a decimal.

Loan coverage should be included - this applies to revenue bonds and varies between 110 to 125% depending on funding source. SRF is 125%. Loan coverage is the annual debt multiplied by some factor to account for non-payment.

HI amount in Worksheet D, cell G24

ce Between Wastewater Treatment Nutrient
and More" (WERF, 2011). The WERF study
gent treatment that is close to Montana's
ria (coming up just short on TN but being
d than lagoons, does not directly treat N and
ually, WERF Level 2 is a bit more stringent).

Operations Cost (dollars per day per 1 MGD actual flow)	**Approximate Equivalent to DEQ standards**
250	No treatment
350	General Variance
640	
880	
1370	Base Numeric Nutrient standards

Actual Flow (Million Gallons per Day)	# of Households in your community	Current wastewater annual bill (Use Worksheet C if you need help on this)	Median Household Income 2010 (ACS 5 year estimate)	Capital cost (million dollars) to meet WERF 5	Annual Capital cost to meet WERF 2 (dollars)	Annual Operations costs to meet WERF 2 (dollars)	Annual Capital and Operations cost ($)
0.5	1,500	$580.36	$52,147	17.44	$1,398,688	$250,025	$1,648,713
0	0	$0.00	$0	0.00	$0	$0	$0

terest

Annual Additional Cost per Household (increase in sewer rate)	Predicted average household sewer fee to meet criteria	Expected % MHI to Meet Base Numeric Nutrient Criteria (plus current wastewater fees)	Percent increase in Wastewater bill
$1,099.14	$1,679.50	3.22%	189.39%
#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!

Enter this number into Worksheet D, cell 24. Skip worksheet C.

Tests for Substantial Impacts

Worksheet C-Calculation of Total Annual Pollution Control Costs Per Household

If you calculated an MHI number using the WERT numbers in Worksheet B, you can skip this worksheet. If you otherwise need to fill out this worksheet, Include those households in the study area that pay wastewater fees on the system in question.

In order to calculate the current annual pollution control costs for households, it is recommended that you use the actual current annual wastewater fee that is currently being paid by households. You should be able to obtain that number from the municipality that is being studied. Once you obtain that number, enter it directly into cell F25. If the current household fee being paid is not available, then you can use the formula provided here starting in cell F19 to estimate the current annual fee per household. Regardless, it is still necessary to fill in cell F24-Number of Households, and helpful to fill in the rows above that cell as well.

A. Current Pollution Control Costs:

Current sewer rate

Total Annual Cost of Existing Pollution Control $ (1)	$0	infrastructure such as sewer lines
Amount of Existing Costs Paid By Households $ (2)	$0	
Percent of Existing Costs Paid By Households %(3)	_____	
Number of Households* (4)	1700	
Annual Cost Per Household [Calculate: (2)/(4)] $ (5)	$0	here to estimate current annual fee.

* Do not use number of hook-ups.

B. New Pollution Control Costs

Are households expected to provide revenues for the new pollution control project in the same proportion that they support existing pollution control? (Check a, b or c and continue as directed.)

a) Yes [fill in percent from (3)] percent.(6a)	_____
b) No, they are expected to pay _____ percent.(6b)	_____
c) No, they are expected to pay based on flow. (Continue on Worksheet C, Option A--See below)	_____

Total Annual Cost of Pollution Control Project [Line (7), Worksheet B] $ (7)	0
Proportion of Costs Households Are Expected to Pay [(6a) or (6b)] (8)	100.00%

Amount to Be Paid By Households [Calculate: (7) x (8)] $ (9)	0	.....
Annual Cost per Household [Calculate: (9)/(4)--cell F49/F24] $ (10)	0	automatically add to the number found in F25 and give a final result in cell F56.

C. Total Annual Pollution Control Cost Per Household

Total Annual Cost of Pollution Control Per Household (5) + (10) $ (11)	$0	

Worksheet C: Option A---Flow based

Calculation of Total Annual Pollution Control Costs Per Household--Flow based

A. Calculating Project Costs Incurred By Households Based on Flow

Expected Total Usage of Project (eg. MGD for Wastewater Treatment)	2	(1)
Usage due to Household Use (MGD of Household Wastewater)	1.7	(2)
Percent of Usage due to Household Use [Calculate: (2)/(1)]	0.85	(3)
Total Annual Cost of Pollution Control Project	$2,000,000	(4)
Industrial Surcharges, if any	$50,000	(5)
Costs to be Allocated [Calculate: (4) - (5)]	1,950,000	(6)
Amount to Be Paid By Households [Calculate: (3) x (6)]	1,657,500	(7)
Annual Project Cost per Household [Calculate: (7)/F23]	975	(8)

C. Total Annual Pollution Control Cost Per Household

Annual Existing Costs Per Household [F25]	$0	(9)

Total Annual Cost of Pollution Control Per Household [(8) + (9)]	$975	(10)

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rksheet. If you otherwise need to fill out this worksheet,

hat you use the actual current annual wastewater fee
nicipality that is being studied. Once you obtain that
n you can use the formula provided here starting in cell
F24-Number of Households, and helpful to fill in the

This should include all existing charges related to wastewater treatment as well as fees associated with directly relevant existing wastewater infrastructure such as sewer lines

If possible, use the actual current annual wastewater fee that is being paid by households and enter it directly into this cell. If the current fee being paid is not available, then you can use the formula provided here to estimate current annual fee.

As an alternative to the formula outlined here for new pollution control costs, you may instead use the rate the municipality is intending to charge customers to pay for the new WWTP if that rate is known already. If this given rate includes both existing and new costs, then this is the final 'annual cost' number to be used in the municipal household screener in the next tab and the number to enter in cell F56. If the new costs given are to be added on to existing costs, then enter the 'new cost' number in cell F50, and this number will automatically add to the number found in F25 and give a final result in cell F56.

Tests for Substantial Impacts

Worksheet D-Municipal Preliminary Screener

The Municipal Preliminary Screener indicates quickly whether a public entity will not incur any substantial economic impacts as a result of the proposed pollution control project. The formula is as follows:

(Total Annual Pollution Control Cost per Household/Median Household Income) X 100 = Percent MHI

Also added to this screener is a test of Low to Moderate Household Income Percentage rate to account for towns with a high Median Household Income along with a disproportionately high number of low to moderate income households.

A. Calculation of The Municipal Preliminary Screener

Total Annual Pollution Control Cost Per Household [Worksheet C, (11) or Worksheet C, Option A (10)] (1)	_____	and new wastewater treatment levels, then use that number rather than using the formula here
Median Household Income (MHI)* $ (2)	_____	5233. The data is from the American Household Survey 5-Year Estimate from the U.S. Census Bureau
Municipal Preliminary Screener (Calculate: [(1)/(2)] x 100) %(3)	#VALUE!	

B. Evaluation of The Municipal Preliminary Screener

Impact level of additional water treatment costs is [Little, mid-range, large]--(see below)	_____	
Low to Moderate Income Percentage Rate of the town or community (LMI). See below for where the LMI percentage of your municipality falls .	_____	For LMI data, contact Jeff Blend at DEQ, (406) 841-5233.

standards will not impose an undue financial burden and the analysis is done. In this case, no variance will be given and it is not necessary to continue with the Secondary Test in the next tab. If the Municipal Preliminary Screener benchmark comparison is 1% or greater, then it is necessary to continue to the secondary test in the next tab, regardless of the LMI score. If the Municipal Preliminary Screener is clearly less than 1.0% and the LMI is 'high', then one may continue the analysis and move on to the Secondary Test due to a high number of low to medium income households.

Is a secondary test necessary? _____

Municipal Preliminary Screener Benchmark Comparison:

Little Impact	**Mid-Range Impact**
Less than 1.0%	1.0% - 2.0%
Indication of no substantial economic impacts	**Proceed to Secondary Tests**

Low to Medium Income Percentage Rate Benchmark Comparison:

Low	**Mid-Range**
Less than 13%	13-50%

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n or municipality has already calculated a new wastewater annual fee to take unt existing and new wastewater treatment levels, then use that number n using the formula here

ce for MHI data can be found by contacting the Montana Dept of Commerce, nd Economic Information Center, (406) 841-2740 or by contacting Jeff Blend t (406) 841-5233. The data is from the American Household Survey 5-Year from the U.S. Census Bureau

lata, contact Jeff Blend at DEQ, (406) 841-5233.

and the LMI percentage rate is 'low' or 'mid-range' (see financial burden and the analysis is done. In this case, the next tab. If the Municipal Preliminary Screener lary test in the next tab, regardless of the LMI score. If one may continue the analysis and move on to the

Large Impact
Greater than 2%

High
More than 50%

Tests for Substantial Impacts

Worksheet E: Data Used in the Secondary Test for Substantial Impacts

meeting additional water quality standards. In the data collection requests below, use the latest data available. Obtain as many of these values as possible by contacting Jeff Blend at Montana DEQ, 841-5233, using the data sources in column B, and/or contacting the Montana Department of Commerce, Census and Economic Information Center at (406) 841-2740. Again, for the "Substantial" portion of this test, the affected area is the governmental jurisdiction responsible for paying wastewater compliance costs--typically a town or municipality. Make sure that the right hand scroll bar is all the way at the top to see the first data request.

A. Data Collection for

Data	Potential Source
Poverty Rate of a town or community*	Source: U.S. Census Bureau, Data Set: 2006-2010 American Community Survey 5-Year Estimates; Census & Economic Information Center, MT Dept. of Commerce (www.ceic.mt.gov), (406) 841-2740. Table: Ratio of Income to Poverty Level in the Past 12 Months (in 2012 inflation adjusted dollars). Contact Jeff Blend at (406) 841-5233
Low to Moderate Income Percentage Rate of a town or community (LMI)* (LMI is the percentage of persons in a town that earn an income of 200% of the poverty rate or below.)	Source: U.S. Census Bureau, Data Set: 2006-2010 American Community Survey 5-Year Estimates; Compiled 9/20/2012 by the Census & Economic Information Center, MT Dept. of Commerce (www.ceic.mt.gov), (406) 841-2740. Table: Ratio of Income to Poverty Level in the Past 12 Months (in 2012 inflation adjusted dollars). Contact Jeff Blend at (406) 841-5233
Community Unemployment Rate	Source: Montana Department of Labor and Industry, Research and Analysis Bureau, Local Area Unemployment Statistics. Aaron McNay, Economist, Montana Department of Labor and Industry, 406-444-3245. DLI only has unemployment estimates for cities that have a population that is 25,000 or larger and for counties. For all the other cities, we can only provide county level estimates. Only Billings, Bozeman, Helena, Missoula and Great Falls have actual unemployment estimates for the city.
Montana Unemployment Rate	Same as above
Community Median Household Income	Source: Source: US Census Bureau; Data: Data: American Community Survey (ACS) 2007-2011 Estimates. Compiled 4/9/2013 by the Census & Economic Information Center, MT Dept. of Commerce (www.ceic.mt.gov)

State Median Household Income	Source: Joe Ramler-Montana Dept of Commerce/Census and Economic Information Center. Source: US Census Bureau Data: American Community Survey (ACS) 2007-2011 Estimates Compiled 4/9/2013 by the Census & Economic Information Center, MT Dept. of Commerce (www.ceic.mt.gov)
Local Property Tax Revenues + Local Fees	*Annual Financial Reports of the Cities and Towns of Montana*, sheet entitled "Government-wide Statement of Activity", Local Government Services Bureau, Dept of Administration, State of Montana, Kim Smith, (406) 841-2905. Contact Jeff Blend at (406) 444-0218 for information on how to calculate this. or Community Financial Statements, Town, County or State Assessor's Office
City or town population	Source: http://ceic.mt.gov/ Look for the "Current Population" on the left hand side of the web page.

Revenues, Taxes and Fees Burden Index (should automatically calculate)	(Total Property Tax, Fees & Revenues/Community MHI/population)*100

* For calculation of the histograms for Poverty rate and LMI, Data was thrown out for towns where the margin of error for the town population was larger than the town population itself. Data was also deleted for the majority of towns where the margin of error for more than one 'income to poverty ratio' column was larger than the estimated population number in that column. Town data was also thrown out where other obvious errors occurred. In some cases, a professional judgement call was made, with particular emphasis on the accuracy of the 'Income to Poverty Ratio Under 1.00' number in the data worksheet. This cleaning of the data may slightly bias the data in the direction of representing smaller towns less than larger towns, as most town data that was thrown out was from small towns.

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ocioeconomic health of households in the
dards. In the data collection requests below, use the
ontana DEQ, 841-5233, using the data sources in
rmation Center at (406) 841-2740. Again, for the
r paying wastewater compliance costs--typically a
first data request.

_____ *(List town)*

Value	Notes
_____ %	Montana average is about 14.6% in 2011. State level source for 2011 is 2007-2011 American Coummunity Survey data from Montana CEIC._
_____ %	LMI is an index number of the percentage of people in a town with an income below 200% of the poverty rate.
_____%	://www.ourfactsyourfuture.org/cgi/databrowsing/?PAGEID=4&SUBID=268
4.5% --Montana seasonally unadjusted for April 2014	Montana Dept of Labor and Industry, Research and Analysis Bureau, http://www.ourfactsyourfuture.org/cgi/databrowsing/?PAGEID=4
	for 2007-2011 compiled in 2013, http://ceic.mt.gov/Income/IncomePage.aspx

$45,324	for 2007-2011	compiled in 2013, http://ceic.mt.gov/Income/IncomePage.aspx
	for 2011	compiled in 2011

#DIV/0!

re the margin of error for the
y of towns where the margin
tion number in that column.
onal judgement call was
nber in the data worksheet.
less than larger towns, as

Tests for Substantial Impacts

Worksheet F- Substantial Impacts: Calculating the Secondary Score

The Secondary Test is designed to build upon the characterization of the financial burden identified in the Municipal Preliminary Screener. The Secondary Test describes the socioeconomic health of the households in a community and thus their ability to pay for additional wastewater treatme

There are five socioeconomic criteria that are summed up and averaged to see where the households within a community fall in terms of financial health.

For each of the five criteria, a **strong** score is recorded in the right hand column as a '3', indicating strong socioeconomic health for that criteria and thus a greater chance of being able to pay for additional wastewater treatment (and lesser chance of a variance).

A **mid-range** score is recorded as a '2' and indicates moderate or average socioeconomic health for the particular criteria. A **weak** score should be recorded as a '1' and indicates poor socioeconomic health for the given criteria or less ability to pay (and a greater chance of being granted a variance).

Lower rates of poverty, LMI, and unemployment compared to the state average indicate a stronger economic situation in a given town. A higher MHI does the same. A lower current local tax and fee burden also indicates a stronger economic situation, as more disposable income is generally available to households to be able to afford wastewater treatment improvements.

Note: The last criteria, Property tax, fees and revenues divided by MHI and population, gives an indication of the existing burden on local residents within the municipality of fees for local services and of local taxes. Those citizens of towns already paying a lot of money relatively for services such as wastewater and garbage and/or paying higher local taxes are assumed to be less able to pay additional monies for additional wastewater treatment.

Please record the scores in the final column. This table will sum the scores and compute an average Secondary score. Then, move on to the next tab which is the Substantial Impacts Matrix.

Table 2-1 Secondary Indicators for the Municipality (or study area)--Using latest data

As of Sept 2012

SocioEconomic Indicators

	Secondary Indicators			
Indicator	Weak*	Mid-Range**	Strong***	Score
Poverty Rate	More than 40%	6-40% (2008-2012)	Less than 6%	2
Low to Medium Income Percentage (LMI)	More than 45%	10-45% (2008-2012)	Less than 10%	2
Unemployment	More than 1% above State Average (>5.5%)	State Average (seasonally unadjusted)----4.5% (2014)	More than 1% below State Average (<3.5%)	2
Median Household Income	More than 10% below State Median-below $40,910	State Median--$45,456 (ACS 2008-2012)	More than 10% above State Median-more than $50,002	1
Property Tax, fees and revenues divided by MHI and indexed by population	More than 3.5	1.5 to 3.5 (FY 2013)	Less than 1.5	3

Update this criteria every few years (or after a census)

* **Weak is a score of 1 point**

** **Mid-Range is a score of 2 points**

*** **Strong is a score of 3 points**

SUM: 10

AVERAGE: 2.00 divided by the number of Indicators given a score

http://www.epa.gov/waterscience/standards/econworkbook/table21.html

Note: If the applicant is not able to develop one or more of the five indicators, they must
provide an explanation as to why the indicator is not appropriate or not available.

nt.

qual to the Sum divided by the number of
Indicators given a score

Tests for Substantial Impacts

Assessment of Substantial Impacts Matrix

Table 2-2
Assessment of Substantial Impacts Matrix

	Municipal Preliminary Screener		
	Less than 1%	1% to 2%	Greater than 2%
Secondary score			
Less than 1.5	Borderline	X	X
Between 1.5 and 2.5	$	Borderline	X
Greater than 2.5	$	$	Borderline

Result: _____

X-Impacts are Substantial: Move to widespread analysis
Borderline-Impacts may be Substantial: Move to widespread analysis
$-Impacts are not substantial and the community can pay to meet base nutrient criteria: No variance

Communities falling into either the "X" or the "Borderline" category should proceed to the next tab (or Chapter 4 in the EPA Guidance) to determine whether the impacts from the project are also expected to be Widespread. The analyst should note if the result is close to another category. For example, if the Screener score for a hypothetical town is 1.1 and the Secondary Score is 2.4, the analyst should note that although the town falls into the 'borderline' category, it comes close to falling into the '$' category which suggests that the town barely passed the Signficant test.

Criteria for Widespread Impacts

DEQ Widespread Criteria - Factors to Consider in Making a Determination of Widespread Social and Economic Impacts

The financial impacts of undertaking pollution controls could potentially cause far-reaching and serious socioeconomic impacts. If the financial tests outlined in Chapter 2 and 3 of the EPA Guidance or in the Substantial Test tabs (Tabs D through G) of this worksheet suggest that a discharger (public or private) or group of dischargers will have difficulty paying for pollution controls (that the effects will be Substantial), then an additional analysis must be performed to demonstrate whether there will be widespread adverse impacts on the community or surrounding area. There are no economic ratios per se that evaluate socioeconomic impacts. Instead, the relative magnitudes of indicators such as increases in unemployment, losses to the local economy, and changes in disposable income should be taken into account when deciding whether impacts could be considered widespread. Best profession judgment will be relied upon for this analysis.

At a minimum, the analysis must define the affected community (the geographic area where project costs pass through to the local economy), consider the baseline economic health of the community, and evaluate how the proposed project will affect the socioeconomic well-being of the community. In other words, it is the estimated changes in socioeconomic indicators that are of most importance in the Widespread analysis. Applicants should feel free to consider additional measures not mentioned here if they judge them to be relevant. Generally, socioeconomic impacts should not be evaluated incrementally, rather, their cumulative effect on the community should be assessed.

Answer the four 'Descriptive Categories' as fully as possible. Then, answer as many 'Criteria Questions' as possible. **The answers to the 'Criteria Questions' in relation to the Descriptive categories will form the backbone of the final answer to whether impacts would be Widespread.** The interdependence between the affected entity(ies) and the affect community is a major factor in demonstrating that the impacts are widespread.

INPUT CATEGORY	Answer
Descriptive Questions	
Define the affected study area or community. This is the geographic area where direct project costs pass through to the local economy. In the case of municipal pollution control projects, the affected community is usually the immediate municipality. There are, however, exceptions where the affected community includes individuals and areas outside the immediate community. For example, if business activity of the region is concentrated in the immediate community, then outlying communities dependent upon the immediate municipality for employment, goods, and services should also be included in the analysis. Thus, the Widespread geographical area can encompass a greater area than the immediate town and/or those served by the wastewater system. It can encompass a greater area than defined in Substantial impacts.[1] (1)	
Describe the current general economic trend in the study area or community--qualitatively or quantitatively. (2)	
Name the main industry(s) in the study area and indicate if any major industries are intending to enter the area or leave the area. What is the current health of the main industry or of each industry if there is more than one? Is the boom and bust potential for the study area great? (3)	
Indicate the general population trend in the area. Is the community growing or shrinking? If the information is available, you may consider additional population trends such as whether young people are staying in the area or leaving after they graduate school. (4)	

[1] Here are some examples. If business activity in the region is concentrated in a nearby community and not in the immediate community, then the nearby community may also be affected by loss of income in the immediate community and should be included in the analysis. Similarly, if a large number of workers commute to an industrial facility that is significantly affected by the costs, then the affected community should include the home communities of commuters as well as the immediate community.

Criteria Questions

Describe how the economy in general would be affected, if at all, by having to meet the new water quality standard. Items of discussion could include any loss in population, changes in median income, the closing (or moving to another area) of one or more businesses and industries, or the impact on community and/or commercial development potential in the study area. One can use the baseline data from the Substantial tests to support this answer as well as the answers to the Descriptive questions above. (5)

Will meeting the nutrient standards lead to a loss of employment due to a reduction in business activity or closure? Please give specific examples of what might happen? (6)

Will meeting new water quality standards have a substantial effect on residential and commercial development patterns? For example, would homes and businesses choose to locate in different areas or outside of town as a result of higher wastewater fees? In this answer, one may explore historical deveolopment patterns, financial and/or tax revenue impacts, population growth impacts, unintended impacts on water quality and any other potential consequences (good or bad). (7)

What would be the estimated impact, if any, on disposable income of having to meet standards? If the information is available, the applicant may describe how this change in disposable income would affect the overall economy in the area under consideration (8).

What is the current poverty level in the affected area and can changes be anticipated as a result of the cost of compliance with water quality standards? (9)

Are there any multiplier effects from cost or benefits as a result of having to meet the new water quality standard? In other words will a dollar lost or gained as a result of the criteria result in the loss or gain of more than one dollar in the study area (e.g. direct and indirect spending)? (10)

What would be the estimated change in overall net debt of the municipality as a result of having to meet numeric nutrient standards? Would towns closely approach their debt limits as a result of meeting water quality standards? (11)

Would improved water quality as a result of meeting water quality standards have any widespread positive economic and/or ecological effects on the community? Would expenditures on pollution controls to reach attainment have any positive effects on the community? See the 'Benefits of Water Quality' tab for more details (12)

Is there any additional information that suggests that there are unique conditions in the affected community that should also be considered? (13)

(For non-deg only). In the case of non-degradation, what is the community's majority opinion on growth and/or the entity coming into the town/region and building a facility? What is the community's majority opinion on degradation of the receiving stream's high quality water? (14)

Please summarize why you believe that the costs of compliance with water quality standards creates a widespread and adverse economic impact in your community that would override the need for increased pollution control.

ARRIVING AT A CONCLUSION: The main question to ask is whether widespread economic impacts are likely to occur in the study area as a result of attempting to comply with new water quality standards. The key aspect of a "widespread determination" is that it evaluates change in any socioeconomic conditions that would occur as a result of compliance (EPA 1995).

The analyst should take into account as many of the factors listed above as possible when making a decision on whether impacts are widespread. The decision should be made based on all appropriate factors in an objective manner (rather than as a checklist). The analyst will use his or her judgement on whether all the factors taken together (including some that may not be on this list) constitute widespread impact. Likewise, applicants should not view this guidance as a check list. In all cases, socioeconomic impacts should not be evaluated incrementally; rather, their cumulative effect on the community should be assessed as a whole. Applicants should feel free to use anecdotal information to describe any current community characteristics or anticipated impacts that are not listed in the worksheet.

Helpful Resources

Local chamber of commerce, a certified regional economic development organization, small business development centers, American Community Survey (long form for Census 2010 which will come out every year), and Zip Code-County Business Patterns (U.S. Census Bureau).

Local chamber of commerce. Montana Dept of Commerce's Certified Regional Development Corporations (CRDC) program. All the counties except Flathead and Richland participate in the program. For information. go to http://businessresources.mt.gov/CRDC/default.mcpx. The Small Business Development Center (SBDC) can be found at http://sbdc.mt.gov/default.mcpx. The American Community Survey is conducted annually and provides long form data on an annual basis for states, counties, incorporated cities and towns, census designated places (CDPs), census tracts and block groups. For more information about the ACS, go to http://www.census.gov/acs/www/. The number of businesses by industry, the number of employees and an estimated payroll is available through the County Business Patterns and Zip Code Business Patterns of the US Census Bureau available at http://www.census.gov/econ/cbp/. The Montana Dept of Commerce/Census and Economic Information Center, (406) 841-2740.

Use the information above. Also, employment by sector data is available at the state and county level, not for communities. The Montana Department of Labor and Industry publishes this data. Go to http://www.ourfactsyourfuture.org/cgi/dataanalysis/AreaSelection.asp?tableName=Industry for more information. Contact the Montana Dept of Commerce/Census and Economic Information Center, (406) 841-2740.

Contact the Montana Dept of Commerce/Census and Economic Information Center, (406) 841-2740 or go to http://ceic.mt.gov/ and click on 'Population Demographics' at the menu on the bottom.

what if triggering nondeg is
a result of just general
growth in the community?

REMEDY

After the Significant and Widespread Impacts sections are completed, DEQ will make a determination on whether an individual variance will be granted. If so, a remedy will be put in place to satisfy the individual variance requirements. It is assumed that an individual variance granted will be less strict than General Variance limits.

The Steps below will be followed.

STEP 1: DEQ will determine whether there are reasonable alternatives" to the individual variance such as trading, permit compliance schedules, general variances, alternative variances, or alternative effluent management loading reduction methods such as reuse, recharge, or land application that "preclude" the need for an individual variance. In other words, could the base numeric criteria or General variance be met in an alternative way that would not cause economic hardship? Some of the data needs for this step were carried out in Worksheet A. On a separate sheet of paper, the applicant can provide more data on all alternatives that were looked at to try and meet the base numeric nutrient criteria and the General Variance levels.

STEP 2: If a permittee has demonstrated that substantial and widespread economic impacts would occur if they were to comply with the base numeric nutrient standards or general variance, and there are no reasonable alternatives to discharging, then the cost the permittee will need to expend towards the pollution control project will be based on the sliding scale provided here (see the figure below). The cost cap is determined as a percentage of the community's MHI, and the key driver of the required cost cap is the secondary test (secondary score) calculated in Worksheets E and F.

EXAMPLE: As an example, using the sliding scale below, if the permittee's average secondary score from the secondary tests was 2.0, then the annual cost cap for the pollution control project (including current wastewater fees) would be the dollar value per average household equal to 1.5% of the community's MHI at the time that the analysis was undertaken. This 1.5% MHI would include existing wastewater costs plus new upgrades needed to improve water quality. If this community was already paying 1.5% or greater MHI for its wastewater bill, then no additional monies would be spent (and no additional significant upgrades would need to occur) under the individual variance.

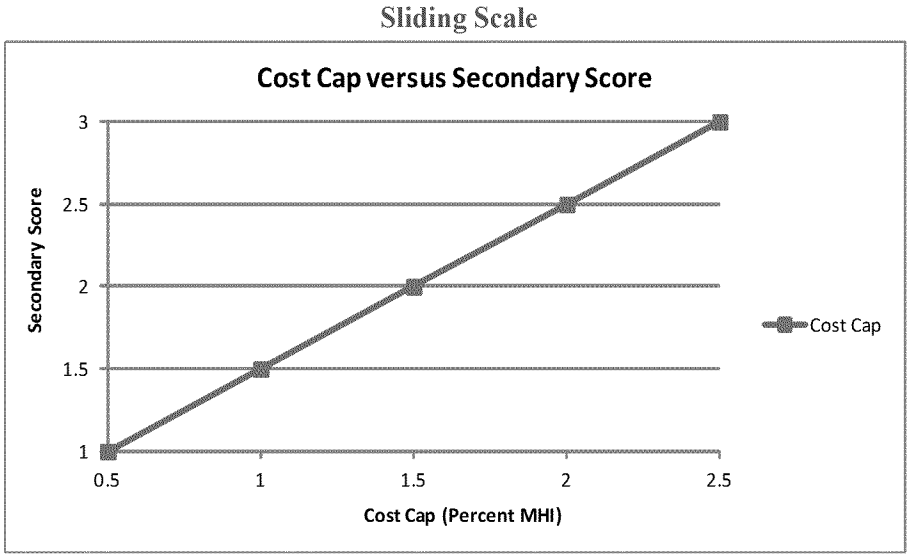

Figure 2-1. Sliding scale for determining cost cap based on a community's secondary score.

The horizontal axis represents percentages of a community's median household income (MHI) that the community would be expected to expend towards the pollution control project as a function of the secondary score shown on the vertical axis under an individual variance.

would be expected to expend towards the pollution control project as a function of the secondary score shown on the

STEP 3: DEQ determines what a town is currently paying in MHI percent for wastewater treatment levels. The difference between the cost cap MHI from the sliding scale and what is currently paying in MHI is the additional money that can go towards water quality improvement. This amount could be zero in some cases if the amount currently paid is equal to or greater than the sliding sclae. This additional money is calculated out for the whole town over 20 years in order to see what the total amount of money available would be. DEQ then looks at the town's current treatment level (TN and TP) and current treatment technology, which informs (along with the additional money amount) what the next level of treatment should be.

STEP 4: Once the amount of money available is determined, DEQ and the applicant look at both capital and O&M investments that could be used to meet an individual variance, given what is available. The WWTP applicant must propose a level of water treatment greater than what they are currently meeting. If a town is already at the cost cap, then they still must look at optimization options such as operator training and use all tools available within their cost cap. The variance must be established as close to the underlying numeric criteria (or general variance) as possible to show both that the highest attainable use is being realized and that further incremental progress towards the underlying standard is occurring. DEQ and the applicant will evaluate options and select the alternative that would result in the highest water quality level that does not trigger substantial and widespread economic impacts. This decision process should be included on a separate sheet of paper including engineering costs, design, treatment effectiveness, conditions on running the new upgrade, etc. This decision may also take into account future wastewater upgrades that need to be done that may not directly improve water quality standards. For example, if $4 million is available over 20 years, but $2 million is expected to be needed for replacing some pipes, then it may be the case that only $2 million may be available to go towards the standard.

Note: It should be noted that the final cost of the engineering project may not exactly match the dollar value associated with the percent MHI determined via Figure 2-1 (i.e., the actual project cost could be somewhat lower or somewhat higher than the dollar value equivalent for the percent MHI of the community in question). Engineers should view the dollar value equivalent of the MHI derived from Figure 2-1 as a target, to help select the most appropriate water pollution control solution for the community. In order to accommodate actual engineering costs for the project, the Department will provide flexibility around the dollar value arrived at via Figure 2-1, subject to final Department approval. It is also important to note that all options should be looked at. The following questions should be asked: a. Did the WWTP look at the least expensive options? b. Did the WWTP look at altenatives like land app, trading and optimization? c. Could the WWTP look towards the next cycle (with more money perhaps available in the future or better technology)

STEP 5: When the discharger and the Department have come to agreement on the level of treatment required, the treatment levels will be adopted by the Department following the Department's formal rule making process, and documented in Circular DEQ-12, Part B.

example, in a rural community where the primary source of employment is agriculture, the reduction of fertilizer and pesticide runoff from farms would reduce the cost of treating irrigation water to downstream users. Another example might be an industrial facility discharging its wastewater into a stream that otherwise could be used for recreational cold-water fishing. Treatment or elimination of the industrial wastewater would provide a benefit to recreational fishermen by increasing the variety of fish in the stream. In both cases, the economic benefit is the dollar value associated with the increase in beneficial use or potential use of the waterbody. The types of economic benefits that might be realized will depend on both the characteristics of the polluting entity and characteristics of the affected community, and should be considered on a case by case basis.

to which benefits can be considered in the economic impact analysis. This determination should be coordinated with the EPA Regional Office. A more detailed description of the types of benefits that might be considered is given in Appendix C. This appendix is not intended to provide in-depth guidance on how to estimate economic benefits; rather, it is intended to give States an idea of the types of benefits that might be relevant in a given situation.

between the intrinsic value of the existence of the resource and its value in use by the human population. Use values are further subdivided into direct or indirect uses. Other valuation concepts arise from the uncertainty surrounding future uses and availability of the resource. A classification of these valuation concepts, along with examples, is presented in Table C-1 below.

C.1 Use Benefits

resource and its uses. A waterbody might be used for recreational activities (such as fishing, boating, swimming, hunting, bird watching), for commercial purposes (such as industrial water supply, irrigation, municipal drinking water, and fish harvesting), or for both. Where recreational activities are created or enhanced due to water quality improvements, the public will benefit in the form of increased recreational opportunities. Similarly, the cost of treating irrigation and drinking water to down stream users could be reduced if pollutant discharges were reduced or eliminated in a particular stretch of river.

non-consumptive uses in that the former excludes other uses of the same resource while the latter does not. For example, water is consumed when it is diverted from a waterbody for irrigation purposes. With non-consumptive uses, however, the resource base remains in the same state before and after use (e.g., swimming). Human health benefits associated with cleaner water could be consumptive (reduced illness from eating finfish or shellfish) or non-consumptive (reduced exposure to infectious diseases while recreating).

its use). For example, commercial fisheries have a market value reflected by the financial value of landings of a particular species. By contrast, no market exists to describe the value individuals receive from swimming. Where market values are available, they should be used to estimate benefits. In the case of water supply, there may or may not be a market for clean water. Some water users may be required to pay for that use as in the case of a farmer paying a regional water board to divert water for irrigation purposes. This will be particularly true in the arid west. By contrast, a manufacturing facility using water for cooling or process water may not pay anything for the right to pump and use water from an adjacent river. For resources with no market value, a number of estimation techniques including the travel cost, estimation from similar markets, and contingent valuation methods have been developed.

While they are conceptually distinct attributes, consumptive use is frequently associated with markets and non-consumptive use is frequently associated with non-market situations. Some resources that are considered market resources, however, may be used non-consumptively. The converse is also true. As an example of the first, a fee may be charged (other than parking) to gain entrance to a state park, however, while a swimmer's use of a lake in the park is not consuming any part of the lake.

indirect use. Examples would be a fishing equipment manufacturer's dependence on healthy fish stocks to induce demand for its products or the dependence of property values on the pristine condition of an adjacent water body. Indirect use is also characterized by the scenic views and water enhanced recreational opportunities (camping, picnicking, birdwatching) associated with the quality of water in a water body. Indirect use benefits such as enhanced property values can be estimated using the hedonic price technique. Care should be taken, however, to not double-count benefits. If property values reflect the proximity to and thus use of water, then the value of the use should not be included separately.

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C.2 Intrinsic Benefits

the resource. Intrinsic benefits are represented by the sum of existence and option values. Existence value indicates an individual's (and society's) willingness to pay to maintain an ecological resource such as clean water for its own sake, regardless of any perceived or potential opportunity for that individual to use the water body now or in the future. Contributions of money to save endangered species such as the snail darter demonstrate a willingness to pay for the existence of an environmental amenity despite the fact that the contributors may never use it or even experience it directly.

routinely pay to store or transport something they are not sure they will use in the future because they recognize it would be more costly to recreate the item than to preserve it. In an ecological sense, pristine habitats and wildlife refuges are often preserved under the assumption that plant or animal species which may yield pharmaceutical, genetic, or ecosystem benefits are yet to be discovered. Option value takes on particular importance when proposed development or environmental perturbations are largely irreversible or pollutants are persistent. Intrinsic benefits are difficult to measure due to the level of uncertainty associated with these benefits. The most common approach to estimating intrinsic benefits, however, is the contingent valuation method, which cannot be described in detail within this short overview.

C.3 Summary: Summarize the Water Quality Benefits of this pollution control project

Total valuation of clean water benefits includes all use and existence values as well as option value. The proper framework for estimating the economic benefits associated with clean water consists of 1) determining when damage first occurs or would occur; 2) identifying and quantifying the potential physical/biological damages relative to an appropriate baseline; 3) identifying all affected individuals both due to potential loss of direct or indirect services or uses, and to potential losses attributable to existence values (may include projections for growth in participation rates); 4) estimating the value affected individuals place on clean water prior to potential degradation; and 5) determining the time horizon over which the waterbody would be degraded or restored to some maximum reduced state of service (if ever), and appropriately discounting the stream of potential lost services. If evaluating an improvement in water quality, the procedures are the same except that benefits gained are measured.

Table C-1: Categories of Use Benefits

Direct	Indirect	Intrinsic
Consumptive:	Fishing Equipment Manufacturer	Option Value (access to resource in future)
Market Benefits	Property Values	Existence Value (knowledge that services of resource exist)

Industrial Water Supply Agricultural Water Supply Municipal Water Supply Commercial Fishing Industrial Water Supply	Aesthetics (scenic views, water enhanced recreation)
Non-Market Benefits	
Recreational Fishing Hunting	
Non-Consumptive:	
Swimming Ecological Health Boating Human Health	

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would reduce the cost of treating irrigation water to
ream that otherwise could be used for recreational
reational fishermen by increasing the variety of fish
eneficial use or potential use of the waterbody. The
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concepts, along with examples, is presented in Table C-1

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entifying all affected individuals both due to
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potential degradation; and 5) determining the
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, the procedures are the same except that

Non-Degredation for a Public Entity

allows the public to make decisions about important environmental actions. Where the State intends to provide for development, it may decide that some lowering of water quality in "high-quality waters" is necessary to accommodate important economic or social development. Any such reduction in water quality, however, must protect existing uses fully and must satisfy the requirements for intergovernmental coordination and public participation.

To determine if water quality can be lowered for a new public development, the same tests are used as in this worksheet. However, the questions asked are slightly different.

Questions:
(1) Will the pollution controls needed to maintain the high quality water interfere substantially with the proposed public development in a way that compromises the community's current financial and socioeconomic well-being ? (Analogous to secondary test for Substantial Impacts)
(2) Is the proposed public development important economically and socially to the study area? (Analagous to Wide

The tests used to demonstrate 'interference' and 'importance' are the same as those used to demonstrate substantial and widespread impacts. The difference is, however, that an antidegradation review considers situations that would improve the current economic condition as opposed to hurting them.

If the answer is no to either of questions 1 or 2 above, then the analysis is over---no degradation of water quality is
If the answer is yes to both questions, then the tests must show that the public development interfered with by the pollution controls necessary to prevent degradation *is* an *important* economic and social development.

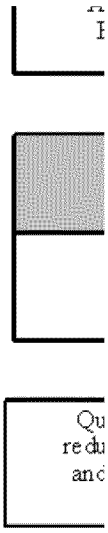
To answer question (1), please complete Worksheets A through F, and the Substantial Impacts Matrix.
To answer question (2), please complete the DEQ Widespread Criteria worksheet.
Complete the summary information on tab following this one entitled 'Non_deg Summary'.

An antidegradation review must determine that the lowering of water quality is necessary in order to accommodate social development in the area in which the waters are located.

While the terminology is different, the tests to determine substantial and widespread economic impacts (used when removing a use or granting a variance) are basically the same as those used to determine if there might be interference with an important social and economic development (antidegradation). As such, antidegradation analysis is the mirror image of the analyses described in Chapters 2, 3 and 4 of the EPA Guidance. Variences and downgrades
refer to situations where additional treatment needed to meet standards may result in worsening economic conditions; while antidegradation refers to situations where lowering water quality may result in improved social and economic conditions.

When performing an antidegradation review, the first question is whether the pollution controls needed to maintain the high-quality water will interfere with the proposed development. If not, then the lowering of water quality is not warranted. If, on the other hand, the pollution controls will interfere with development, then the review must show that the development would be an important economic and social one. These two steps rely on the same tests as the determination of substantial and widespread impacts.

The analytic approach presented here can be used for a variety of public-sector and private sector entities, including POTWs, commercial, industrial, residential and recreational land uses, and for point and nonpoint sources of pollution.



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spread Impacts Test)

necessary.

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Matrix.

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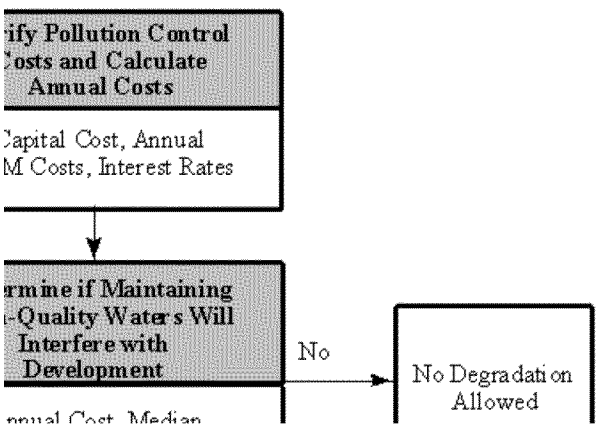
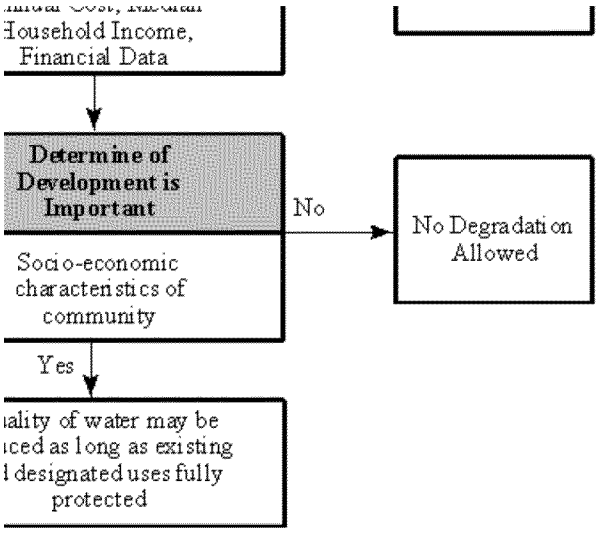
Figure 5-1:
degradation Review




Household Income,
Financial Data
Determine of Development is Important
No
No Degradation Allowed
Socio-economic characteristics of community
Yes
ality of water may be
ced as long as existing
designated uses fully
protected

results that you reach for each step for your analysis. This is help to give a simple overview of what you found out.

OVERALL STEPS SUMMARY

Step 1: Verify Project Costs and Calculate the Annual Cost of the Pollution control project

Step 2: Calculate Total Annualized Pollution Control Costs Per Household

Step 3: Calculate and Evaluate the Municipal Preliminary Screener Score-- identifies only entities that can pay for sure

Step 4: Apply the Secondary Test - Will the pollution controls needed to maintain the high-quality water interfere with the proposed public development in a way that compromises the community's current financial and socioeconomic well-being

Step 5: Assess where the community falls in The Substantial Impacts Matrix - This matrix evaluates whether or not communities are expected to incur **substantial** economic impacts due to maintaining high quality waters (e.g. interference with public project). If the applicant cannot demonstrate substantial impacts, then they will be required to meet existing water quality standards.

Step 6: If impacts are expected to be substantial on the community, then the applicant goes on to determine whether they are also expected to be 'important' (Go to "DEQ Widespread Criteria" tab to answer this question). For Non-deg, the question is: Is the proposed public development important economically and socially to the study area? (Analagous to Widespread Impacts Test)

Step 7: Present the Final Conclusion

marize the results that you reach for
nd out.